

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

1-107. (Cancelled)

108. (New) A method for over-expressing a desired protein encoded by a desired endogenous gene or portion thereof in a cell introduced into an animal, said method comprising:

(a) introducing a vector comprising a transcriptional regulatory sequence into one or more cells in vitro;

(b) maintaining the one or more cells in (a) containing the introduced vector under conditions appropriate for non-homologous recombination of the vector with the genome of the one or more cells thereby producing one or more non-homologously recombinant cells, wherein the transcriptional regulatory sequence on the vector is operably linked to an endogenous gene thereby over-expressing the endogenous gene and protein encoded by said endogenous gene;

(c) screening said one or more cells from step (b) for expression of a desired endogenous gene;

(d) isolating and cloning said cell from step (c) expressing said desired endogenous gene; and

(e) introducing said non-homologously recombinant cell of step (d) into an animal and maintaining the non-homologously recombinant cell in said animal under conditions

appropriate for over-expression of said desired protein encoded by said desired endogenous cellular gene or portion thereof.

109. (New) The method of claim 108, wherein said transcriptional regulatory sequence is a promoter.

110. (New) The method of claim 109, wherein said promoter is a viral promoter.

111. (New) The method of claim 110, wherein said viral promoter is the cytomegalovirus immediate early promoter.

112. (New) The method of claim 109, wherein said promoter is a non-viral promoter.

113. (New) The method of claim 109, wherein said promoter is inducible.

114. (New) The method of claim 108, further comprising introducing double strand breaks into the genomic DNA of said cell prior to or simultaneously with integration of said vector.

115. (New) The method of claim 108, wherein said vector is linear.

116. (New) The method of claim 108, wherein said endogenous cellular gene encodes a transmembrane protein.

117. (New) The method of claim 108, wherein said promoter is operably linked to a splice donor sequence on the vector and wherein the splice donor is spliced to a splice acceptor in the endogenous gene that that encodes the desired protein.

118. (New) The method of claim 108, wherein said animal is a mammal.

119. (New) The method of claim 118, wherein said mammal is a human.